

WHAT IS CLAIMED IS:

1. A process for forming a nonwoven web comprising the steps of:

Sub B2
melt spinning multicomponent filaments, said filaments comprising a first polymeric component and a second polymeric component, said first polymeric component having a faster solidification rate than said second polymeric component, said second polymeric component containing a butylene-propylene copolymer;

drawing said multicomponent filaments; naturally crimping said multicomponent filaments; and

thereafter forming said multicomponent filaments into a nonwoven web.

2. A process as defined in claim 1, wherein said second polymeric component comprises polyethylene.

3. A process as defined in claim 1, wherein said butylene-propylene copolymer comprises a random copolymer containing up to about 20% by weight butylene.

4. A process as defined in claim 1, wherein said butylene-propylene copolymer is added to said second polymeric component in an amount up to about 10 percent by weight.

5. A process as defined in claim 1, wherein said butylene-propylene copolymer is added to said second polymeric component in an amount from about 0.5% to about 5% by weight.

6. A process as defined in claim 2, wherein said first polymeric component comprises polypropylene.

7. A process as defined in claim 2, wherein said first polymeric component comprises a material selected from the group consisting of nylon, polyester and propylene-ethylene copolymers.

8. A process as defined in claim 1, wherein said second polymeric component further comprises reclaimed polymers, said reclaimed polymers comprising polypropylene, polyethylene or copolymers of propylene and ethylene.

9. A process as defined in claim 1, wherein said multicomponent filaments have a linear density of less than about 2 denier.

10. A process for forming a nonwoven web comprising the steps of:

Sub B3
melt spinning bicomponent filaments, said bicomponent filaments comprising a first polymeric component and a second polymeric component, said first polymeric component comprising polypropylene, said second polymeric component comprising a mixture of polyethylene and a butylene-propylene copolymer;

drawing said bicomponent filaments; crimping said bicomponent filaments; and thereafter forming said bicomponent filaments into a nonwoven web.

11. A process as defined in claim 10, wherein said bicomponent filaments are crimped by subjecting said filaments to a flow of a gas.

12. A process as defined in claim 10, wherein said butylene-propylene copolymer is present in said second polymeric component in an amount from about 0.5% to about 5% by weight.

13. A process as defined in claim 12, wherein said butylene-propylene copolymer comprises a random copolymer containing about 14% by weight butylene.

14. A process as defined in claim 10, wherein said second polymeric component further comprises reclaimed polymers, said reclaimed polymers comprising polypropylene, polyethylene or copolymers of propylene and ethylene.

15. A process as defined in claim 14, wherein said reclaimed polymers are present in said second polymeric component in an amount up to about 20% by weight.

16. A process as defined in claim 10, wherein said bicomponent filaments have a linear density of less than about 2 denier.

17. A process as defined in claim 10, wherein said crimped bicomponent filaments contain at least 10 crimps per inch.

18. A nonwoven web comprising spunbond multicomponent crimped filaments, said multicomponent crimped filaments being made from at least a first polymeric component and a second polymeric component, said first polymeric component having a faster solidification rate than said second polymeric component, said second polymeric component containing a butylene-propylene random copolymer.

19. A nonwoven web as defined in claim 18, wherein said second polymeric component comprises polyethylene.

20. A nonwoven web as defined in claim 19, wherein said butylene-propylene random copolymer is present within said second polymeric component in an amount up to about 5% by weight.

21. A nonwoven web as defined in claim 20, wherein said first polymeric component comprises polypropylene.

22. A nonwoven web as defined in claim 21, wherein said butylene-propylene random copolymer contains up to about 20% by weight butylene.

23. A nonwoven web as defined in claim 22, wherein said multicomponent crimped filaments have a linear density of less than about 2 denier.

24. A naturally crimped bicomponent filament comprising at least a first polymeric component and

Sub B4

a second polymeric component, said first polymeric component having a faster solidification rate than said second polymeric component, said filament containing a crimp enhancement additive, said crimp enhancement additive being added in an amount sufficient for said filament to have at least 10 crimps per inch, said multicomponent filament having a linear density of less than about 2 denier.

25. A naturally crimped multicomponent filament as defined in claim 24, wherein said filament has a linear density of less than about 1.2 denier.

26. A naturally crimped multicomponent filament as defined in claim 24, wherein said second polymeric component comprises polyethylene and wherein said crimp enhancement additive comprises a butylene-propylene random copolymer and is contained within said second polymeric component.

27. A naturally crimped multicomponent filament as defined in claim 26, wherein said first polymeric component comprises polypropylene.

28. A process for improving the unbonded strength of a spunbond nonwoven web, said process comprising the steps of:

incorporating into a first polymeric component a butylene-propylene copolymer;
melt spinning multicomponent filaments from said first polymeric component and at least a second polymeric component;

drawing said multicomponent filaments;

and

thereafter forming said multicomponent filaments into a nonwoven web wherein said butylene-propylene copolymer is present in said web

Sub B3

OS
Comp

29. A process as defined in claim 28, wherein said butylene-propylene copolymer is added to said first polymeric component in an amount from about 0.5% to about 5% by weight.

Figure 1 consists of 12 sub-diagrams labeled (a) through (l), arranged vertically. Each diagram shows a different stage in the construction of a 3D model of a human head and neck. The process begins with a simple wireframe of the head and neck (a), followed by the addition of facial features like eyes, nose, and mouth (b, c, d, e, f, g, h, i, j, k, l). The final stages (m, n, o, p, q, r, s, t, u, v, w, x, y, z) show the model being textured, colored, and detailed with hair, skin, and clothing, resulting in a realistic 3D representation.